

**REMARKS**

The Examiner's Action mailed on July 7, 2006, has been received and its contents carefully considered.

In this Amendment, Applicants have canceled claim 1, and amended claims 2-5, 7-12 and 14. Claims 2 and 8 are the independent claims. Claims 2-14 remain pending in the application. For at least the following reasons, it is submitted that this application is in condition for allowance.

The Examiner has rejected claims 1-14 under U.S.C. § 112. Claim 1 has been cancelled, and the rejection therefore is no longer applicable against claim 1. Claims 2-5, 7-12 and 14 have been amended to correct the matters specifically noted by the Examiner, and to correct various informalities noted during the review. It is requested that this rejection be withdrawn.

The Examiner has also rejected claims 1-14 under 35 U.S.C. 103(a) as being unpatentable over the combination of *Pahuski* (US 5,587,286), *Fleming* (US 2002/0055134A1), and/or *Roth* (US 6,699,685) in view of *Levenberg* (US 2005/0031598). Claim 1 has been cancelled, and the rejection against this claim is therefore no longer applicable. Claims 2-5, 7-12 and 14 have been amended, and it is submitted that these amended claims are *prima facie* patentably distinguishable over these references for at least the following reasons.

It is well-settled law that in order to properly support an obviousness rejection under 35 U.S.C. §103, there must have been some teaching in the prior art to suggest to one skilled in the art that the claimed invention would have been obvious. WJ Gore & Associates, Inc. v. Garlock Thomas, Inc., 721 F.2d 1540, 1551 (Fed. Cir. 1983).

Amended independent claim 2 is directed to a method of water analysis in a semiconductor manufacturing process for detecting a presence of microorganisms in a water sample, comprising: providing a membrane as a filter; filtering out the microorganisms in the water sample, using the membrane; growing the microorganisms on the membrane; staining the microorganisms on the membrane with potassium permanganate (KMnO<sub>4</sub>); rinsing the membrane with purified deionized water; and performing a colony count for the microorganisms on the membrane.

Amended independent claim 8 is directed to a method of water analysis in a semiconductor manufacturing process for separately detecting a presence of microorganisms in a plurality of water samples, comprising: providing a plurality of membranes as filters; filtering out the microorganisms in each of the water samples, using a corresponding one of the membranes, separately; growing the microorganisms on different membranes at different times; staining the microorganisms on each of the membranes with potassium permanganate

(KMnO<sub>4</sub>); rinsing each of the membranes with purified deionized water; and performing a colony count for microorganisms on each of the membranes.

The Examiner acknowledges that the cited references *Pahuski* (US 5,587,286), *Fleming* (US 2002/0055134A1) and *Roth* (US 6,699,685) do not disclose the stain is potassium permanganate (KMnO<sub>4</sub>), and also states that *Levenberg* (US 2005/0031598) teaches cells being stained with potassium permanganate. Accordingly, the Examiner states that it would be obvious to stain the cell with potassium permanganate according to the combination of cited references, and further states that no unexpected results are taught in the claimed invention. However, it is submitted that it would not be at all obvious to make such a combination.

The claimed invention is used in the semiconductor manufacturing process for detecting the presence of microorganisms in a water sample. Successful water analysis helps in monitoring and controlling the quality of deionized water used in cleaning the wafer, so that the accuracy and precision of the semiconductor products can be controlled well (please see para. [0002]). The cited references *Pahuski* (US 5,587,286), *Fleming* (US 2002/0055134A1) and *Roth* (US 6,699,685) neither disclose or suggest that the microorganisms are filtered out in the water sample, nor do they disclose or suggest that the stain is potassium permanganate (KMnO<sub>4</sub>). Also, *Levenberg* (US 2005/0031598) does not disclose or suggest any step recited in the claimed invention. The potassium

permanganate of *Levenberg* is used to stain the RA-conditioned constructs in vivo and in vitro, and the stained results confirmed that RA-conditioned constructs in vivo exhibited larger and better organized neural structures than those seen in vitro, by showing ductular structures lined by tall columnar epithelium invested with long cilia resembling ependymal cells and rosettes with abundant melanin granules (para. [108]).

Further, contrary to the detecting of microorganisms in a water sample in a semiconductor manufacturing process, the cited references, *Pahuski*, *Fleming*, *Roth* and *Levenberg* (US 2005/0031598), are respectively related to the fields of food materials, prokaryotic and eukaryotic cells, *E. coli* Bacteria, and embryonic stem cell differentiation. Those cited references are from nonanalogous arts. A person skilled in the semiconductor field, seeking to sufficiently analyze water purity, would not be reasonably expected to look to fields of food materials, prokaryotic and eukaryotic cells, *E. coli* Bacteria, and embryonic stem cell differentiation. The disclosures of those cited references fail to suggest their applicability to the semiconductor industry. Thus, the combination of elements from non-analogous sources, in a manner that reconstructs the Applicant's invention only with the benefit of hindsight, is insufficient to present a *prima facie* case of obviousness.

Besides, the claimed invention must be considered as a whole. The cited references (including *Pahuski*, *Fleming*, *Roth* and *Levenberg*) neither disclose nor

suggest the method used in the semiconductor manufacturing process for detecting the water purity as claimed in Applicant's invention (ex: rapidly and accurately identify microorganisms after 24 hours incubation, please see Table 1). Three possible sources for motivation to combine the references are: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art (MPEP 2143.01). The four references in the irrelevant arts do not suggest to the persons of ordinary skill in the semiconductor art to solve the problem as a whole, so that the reference teachings could not be combined or modified to produce the claimed invention (In re linter, 458 F. 2d 1013, 1016, 173 USPQ 560,562 (CCPA 1972); In re Kotzab, 217 F, 3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000)). Since there is nothing in any of the cited references as a whole to suggest the desirability of the combination, and there is no suggestion to combine these references to arrive at the claimed invention, it is not obvious to make such a combination.

It is therefore submitted that the independent claims 2 and 8 are *prima facie* patentably distinguishable over the prior arts, and claims 3-7 and 9-14 are allowable for at least the reason that they depend from claims 2 and 8, so that this application is deemed clearly to be in condition for allowance. Allowance of the application and the passing of this case to issue are therefore respectfully requested.

If the Examiner believes that a conference would be of value in expediting the prosecution of this application, the Examiner is hereby invited to telephone the undersigned counsel to arrange for such a conference.

Should any fee be required, the Commissioner is hereby authorized to charge the fee to our Deposit Account No. 18-0002, and advise us accordingly.

Respectfully submitted,

October 3, 2006

Date



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